IN THE

Supreme Court of the United States.

No. 427 OCTOBER TERM, 1899.

THE CARNEGIE STEEL COMPANY, LIMITED, Petitioners,
vs.
THE CAMBRIA IRON COMPANY, Defendant.

Brief for Defendant in Answer to the Petition for Writ of Certiorari.

This case was decided by the United States Circuit Court of Appeals for the Third Circuit by the unanimous bench of three judges, including Judges Acheson and Dallas, Circuit Judges, overruling the decision of the District Judge for the Western District of Pennsylvania, sitting in the Circuit Court, who had by placing a peculiar and unwarranted construction upon the patent, reading into the patent all the refinements of the present practice of the Carnegie Company of storing their blast furnace metal and converting it into Bessemer steel, instead of construing the patent according to its terms, held it valid and infringed.

The Appellate Court bases its decision mainly upon the construction proper to be given to the patent, as found in the terms thereof and corroborated by the proceedings in the Patent Office leading to its grant.

The practice complained of was the storage in an immense reservoir holding close to three hundred (300) tons, of all the molten metal received from the numerous blast

furnaces of the defendant company, the metal being dumped into the reservoir as it is produced and tapped at intervals from the furnaces, the metal being held in a liquid condition until it was required for use in the converters; just as any ordinary water or liquid reservoir is employed to maintain a supply to be drawn from when needed.

Incidental to this storing, there is a certain mixing of the impurities, sulphur, silicon, etc., contained in the molten metal, but it is to be understood that such mixing is a mere mechanical operation governed by the well known law of diffusion of liquids, and applying equally to the mixing of molten metals and liquids of any kind, taking place in the mixing of tea, coffee or lemonade.

The second claim of the Jones patent sued upon (the only one in issue), is for mixing molten metal in a peculiar way, to obtain a uniform homogeneous metal for subsequent uses. The petitioner's effort has been to make this claim cover the ordinary reservoiring of blast furnace metal and the subsequent Bessemerizing of the same, so laying a tribute upon all steel makers who use storage vessels simply to maintain a supply for conversion. This they succeeded in doing in the Circuit Court by obtaining a ruling that the term "molten metal" was *limited to blast furnace metal*, though its natural meaning included any metal in that condition, such as that remelted in the cupola; and a ruling that the patent was *limited to the subsequent Bessemerizing* of the metal, though in terms it included any subsequent treatment or use.

The lower court was also persuaded to ignore the fact, made clear by the patent and the proceedings in the Patent Office, that the peculiar mixing covered by the Jones patent was a mixing of *suitable metal* in such way as to obtain a *standard composition*, thus disregarding the clear limitation of the patent, and thereby holding it infringed.

The Appellate Court has found that the claim of the patent includes any suitable molten metal (p. 1578), and that the patent cannot be limited to obtaining uniform metal for Bessemerizing (p. 1578). The reasoning in support of this position is so clear and convincing that no argument would strengthen it.

The finding of the Court as to the position of the patent is well set forth in the following closing paragraph (p. 1585):

> "As we have said, the Jones patent was not for the storage or reservoiring of metal drawn either from furnace or cupola nor the mixing incidental thereto. The patentee had acquiesced in the finding of the Patent Office Examiner that as to these matters he was anticipated by the Witherow patents and Kirk's publication. If the defendants' reservoir carries with it by well known natural laws incidental mixing, it cannot be regarded as an infringement of the patent in suit unless in addition to its function as a reservoir it has in combination some additional element set out in complainant's process. If it be urged that the defendants by drawing from several furnaces the molten metal required to replenish their reservoir, thereby obtain the average of uniformity sought by complainant's process, the answer is, that in this respect the complainant's patent is anticipated by the British patent to Deighton No. 3,672, May 7, 1874, whose claim of invention was the placing of a vessel so as to "receive the molten metal tapped from two or more blast furnaces to get a better average of metal which will be more suitable for making Bessemer steel or metal of uniform quality."

The Appellate Court therefore found that the Jones patent did not cover defendant's reservoiring; that by his action in the Patent Office he had precluded himself from so doing; and that the patent was anticipated if construed to cover such practice.

Statements of the Petition and Brief.

Many of the statements, both of the petition for *certiorari*, and the brief in support thereof are without foundation in fact. The only explanation we can find for the same is that neither of the present counsel had any connection with the taking of the evidence in the case, one of the counsel appearing for the first time in connection with this petition, while the counsel who attended the taking of the evidence and are familiar with the same have apparently no connection with the petition. We may, therefore, be pardoned if we correct some of those errors in answering the petition.

The assertion is made on the last page of the brief that this defendant stood for the other manufacturers of Bessemer steel. If this means that there is any privity between defendant and the other manufacturers in the defense of this suit the statement is incorrect. Defendant has not been assisted by others in this defense, except by the Maryland Steel Co., before this petitioner discontinued its suit against that company, and in no sense represents any other manufacturer. The case is not a contest between the Carnegie Company and the steel trade, but simply an issue between the petitioner and a single defendant as to the specific use of a specific apparatus with no more public importance than any other patent suit between individuals. Others may infringe, and the petioner is free to sue them.

The petitioner alleges great importance of the suit to the *public* and the parties, but it has not greater importance than any ordinary patent suit.

While fully understanding that the issue of the writ is entirely within the discretion of this court, we believe that the Court has not in its public utterances indicated this case to be one intended to be included within the reasons for

the grant of such a writ. Our understanding of the decision in *Forsythe vs. Hammond*, 166 U. S. 506, 512, is that, where the Appellate Court is unanimous, the writ should be granted only where questions of such "public and national importance as to require that a consideration and determination thereof should be made by the supreme tribunal of the nation," are involved, and that the class of cases of importance are those "affecting the interest of this nation in its internal and external relations." (515.) Property rights of a large portion of the city as involved in that case, or the relations to foreign nations, as in the "*Three Friends*," 166 U. S. 1, are obviously proper, but the Court has declined to issue the writ in cases involving only private interest, even though large amounts may be involved. *Ex parte Woods*, 143 U. S. 202; *American Construction Co. vs. Jacksonville Railway*, 148 U. S. 372. This case has no more public interest than any patent suit, and its interests do not extend beyond the action against the present defendant. This is clearly shown by the petitioners own proceedings under the patent. The first suit was brought against the Maryland Steel Company in October, 1893 (19–24), their answer being filed in December of that year. No testimony was taken in the case for over a year, or until May 23, 1895, (p. 156 A.) and the suit was otherwise permitted to lag until this defendant's reservoir was installed, this suit being brought in December, 1895. The evidence for the defense in both cases was taken together, and was practically completed, when, on January 16, 1897, (1207–8) the Maryland suit was discontinued, on motion, against defendant's protest, the basis for the motion being that the Maryland Works were not then running and it was, "therefore, deemed by the complainant unprofitable and fruitless to pursue its suit further at present."

Where they thus had an opportunity to settle the question as against another large manufacturer, and deliberately abandoned it for such trivial reasons, we submit that the argument in support of the writ, as tending to prevent costly and undesirable litigation absolutely fails; and that each steel maker should have at least a right to be heard as to whether its reservoiring ofthe metal would infringe.

The attempt to place the patented Jones process on the same plane as the Bessemer invention, and the assertion that until it was developed no blast furnace metal was used successfully in making steel is incorrect, and could only have been made from absolute ignorance of the record.

This complainant, the petitioner itself, used direct metal from 1882-87, making one million, one hundred and fifty-four thousand, seven hundred and thirty-two tons (Lauder 105). The Illinois Steel Company with fully as large an output employed it continuously for ten years, from 1882 to 1892, (Forsyth 390). In fact, the universal European practice had been to use direct metal where it was practicable. The European practice was followed by the Carnegie and Illinois Companies, including the carrying of the metal in ladles from the blast furnaces to the converters, and, at times, the mixing of the metal from two or more furnaces in one ladle. The practice is almost as old as the Bessemer practice, commencing in Sweden in 1857 and being used continuously since that date. (1065). It has been the regular practice in Germany, France and Belgium since 1866 (1066), and has been the practice in England since the early seventies. For example, at Barrow, in 1876, they were using the produce of 14 blast furnaces with a weekly output of from 1,500 to 2,000 tons, which would make from 75,000 to 100,000 tons per year, and the statements of the

manager were that it worked admirably and did not interfere with the quality of the metal, (1100 to 1102); while at Bulcklow-Vaughn, in England, the statement is that they had used it for three or four years "making steel very successfully to the extent of many thousands of tons (1050). That good steel was produced as shown through the record, the evidence showing that the main difficulty was the lack of storage capacity for the molten metal, as the furnaces were tapped at long intervals, say from 4 to 6 hours apart, and the converters required metal at short intervals, during 20 to 30 minutes; while there was the further difficulty of irregularity of weight of charges caused by the metal chilling while standing for a long period in the carrying ladles. This finally led the defendants, as well as the Illinois Steel Company and the Maryland Steel Company, to install these large tanks (pp. 568, 390-1, 236, 283). The entire claim of the vast importance as an invention therefore fails, the fact resolving itself into the mere question of the storage capacity for the molten metal.

That such reservoirs for molten metal were known long before the Jones' invention, and that their mixing function of giving metal of more uniform qualities had been utilized and recognized, was fully proved by defendant. Remembering that the second claim of the patent includes the mixing of the "molten metal," whether from the blast furnace or cupola—and no matter to what use it may be put, whether for Bessemerizing, casting, or otherwise,—the prior use of such reservoirs makes it absolutely clear, we believe, that the Appellate Court was justified in its finding; that the Jones' patent could not cover reservoiring, and could only be sustained when limited to the mixing of suitable metals to produce a standard uniform quality.

In addition to the Witherow patents (1,324, 1,327), Deighton patent (1,376) and the Kirk publication (1,158),

referred to by the Appellate Court, such reservoirs have been universally used in car wheel foundries, such as at the Whitney Car Wheel Works in Philadelphia since 1849, where the identical steps followed by this defendant were practiced with molten cupola metal (158); all the metal from the furnaces passing into the reservoir, and being held there and drawn from when needed, the reservoir being used both for storing and mixing, the mixing being recognized as equally as important as the storing.

When the Bessemer practice was introduced into this country the storing of the molten metal in accumulating ladles came into immediate use in all the works, including the petitioners and the defendants, the reservoirs were made of large capacity, generally more than double the capacity of the converter charge to maintain a supply of the molten metal for the converter. Their value as reservoirs was recognized by A. L. Holly, the father of the Bessemer practice in America (1,118, 1,183, 1,195–6).

Their mixing function was fully recognized in the literature of the art and formed a basis of discussion abroad for use with the direct or blast furnace metal. Mr. Snelus, one of the leading steel makers of England, repeatedly calling the attention of the British manufacturers to their advantages, both for maintaining a reserve, and for averaging the metal, one of his statements being "to receive the metal from the blast furnace and hold it in readiness, so that at a moment's notice you could take your iron into a converter and also obtain a better mixture."

As early as 1856 the Tabberner British patent described the employment of a number of blast furnaces which were "to discharge their contents at short intervals of time into one large reservoir, from which the molten metal may be drawn for casting from" (1352, 4); while in the Deighton British patent of 1873 (1376) was provided a large mixing

vessel between the blast furnaces and the converter, as referred to in the opinion of the Appellate Court, the main function being "to get a better average of metal which will be more suitable for making Bessemer steel or metal of uniform quality."

Mr. Holley, as the engineer for all the American Bessemer works, in 1887 made a full report to them including both the petitioner and defendant, on this subject in which he describes the building by Mr. Snelus of a large 20-ton covered ladle "to store, mix and pour" the blast furnace metal, and give a more uniform metal for Bessemerizing (1183); and also a large furnace at Moss Bay "to store and keep hot some 60 tons of iron from all the blast furnaces" (1190). He describes them as reservoirs, and recognizes their mixing function in averaging up the irregular metal and increasing its uniformity (1195–6).

The above brief review of the art which could be largely extended, makes clear that there was, in 1887, no broader ground for Jones to occupy than a special way of mixing the metal, as distinguished from mere reservoiring. As clearly proven when we will hereafter discuss the patent and the Patent Office proceedings, Jones, while first endeavoring to cover both reservoiring and mixing, acquiesced in the finding that the reservoiring was old and made clear the difference between reservoiring and mixing of suitable or selected metals to obtain a *uniform standard composition*, and it was for this that his patent was granted, as held by the Appellate Court. At that time this special mixing probably had merit, but blast furnace work has so improved, and its product is so more regular to-day, that it is entirely unnecessary, the art having passed beyond it (p. 568).

It is asserted that the Appellate Court decided only one point against the petitioner, namely, non-infringement.

Counsel's reading of the opinion must be peculiar. The Appellate Court clearly stated in its opinion, as above quoted, that Jones was *anticipated as to reservoiring* by Witherow and Kirk, and that the patent could cover nothing but this selection of suitable metal to obtain an average uniform standard, and, above, that if the patent is given a broader construction, it is anticipated by the Deighton patent. We hardly think petitioner can allege absolute novelty with such a ruling.

While petitioner admits that the term "dominating pool" does not appear in the patent, it is asserted that it was "adopted early in the case;" and refers to it as "called dominating by common consent." This statement can only come from ignorance of the record, as the term does not appear either in the patent or in any part of the record. It first appeared in the opinion of the Circuit Court, which united with it the peculiar idea of obtaining not uniformity, but "gradual non-abrupt non-uniformity," and in so doing adopted the present Carnegie practice instead of the patent itself as the supposed monopoly. That the patent is not limited to such a pool is made clear by the wording of the second claim "without entirely draining or emptying" the vessel, as hereafter discussed.

It is asserted that the Appellate Court bases its finding of non-infringement by considering only the effect of a stipulation which had been waived. We do not so understand it, though we believe the stipulation was absolutely binding, and that the statement that it had been waived by defendant is incorrect. The Appellate Court had all the evidence before it. It has made a *finding of fact* upon the evidence properly before it, and has found that this stipulation gave a substantially accurate statement of defendant's practice. It is sub-

mitted that as it is a unanimous finding of fact by the three Judges of the Appellate Court, it is not such a question as should properly be reviewed in this Court, and that it certainly is not the proper ground for issuing a writ of *certiorari*. Such a ruling would be a precedent for writ of *certiorari* in practically every patent case.

The main cause of complaint seems to be the finding as to the amount of metal in the rerervoir. In our view of the case, as hereafter shown, it is unimportant whether the vessel was maintained well filled up or not. The evidence shows that it was customary to have it at least half full, but also shows that the reason for this was in the necessity of maintaining supply, the amount of metal in the vessel depending upon the same conditions governing the amount of liquid in any reservoir.

If the Court considers such matter reviewable it will find that the stipulation was entered into after the petitioner had twice tried to prove infringement and failed, and after defendant had admitted its practice upon the record (p 53, 95–98); that the *stipulation was rested upon from that time until the last hour of the closing of defendant's case* (p. 638–9) when the only reason for suggestion that it should not stand was found in the testimony of the witness Morgan as to the natural use of a reservoir. The evidence on which they claim to avoid the stipulation was based is found on pp. 570, showing its analogy to the old cupola reservoir ladle; and especially 574–5, setting forth that the natural way to use a reservoir, whether for water or other liquid is to maintain it well filled up so as to provide supply in case of need, and that such was the use of defendant's reservoir. There is, therefore, little comfort to petitioner if the stipulation were not binding.

We believe that a review of the opinion of the Appellate Court with the above facts, especially those as to the

condition of the prior art before it, should satisfy this Court that there is no reason for granting the writ in this case.

In order that this Court may, however, if it so desires, examine more carefully into the position of the patent to ascertain itsproper construction, we venture to submit a more extended argument as to the construction and position of the patent, reviewing some of the points presented to the Appellate Court, and which led to the present decision.

More General Review of the Patent and the Points at Issue.

Petitioners' Treatment of the Patent.

In construeing the patent, the petitioners' counsel and the Judge of the Circuit Court practically ignored the description and claims of the patent, and considered as the question at issue whether the practice of mixing and Bessemerizing iron drawn from the smelting furnaces, as used during the progress of the suit at the steel works of both the complainant and defendant companies would have been a patentable method at the date of Jones patent. The studied policy of the petitioner in ignoring the patent and thrusting on the court an issue foreign to it is exemplified in the very beginning of the case where Mr. Gayley, the manager of the complainant company, who signs the petition was put upon the stand to explain the invention and establish infringement. Having testified on these points, Mr. Gayley was asked as to the first cross-question, Vol. 1, p. 54, × Q. 35.

> "Have you read, and are you familiar with the patent to William R. Jones, No. 404,414, on which the present suit is based?"
>
> And he answered.
>
> "*I have never read it.*"

The result of this method of considering the patented (?) invention was to make it as pervasive and as in-

tangible as a pestilence. Where a question of novelty was to be considered the invention was strictly and narrowly construed, and the most delicate distinctions drawn to differentiate it from the numerous old methods of storing and mixing iron, but on the other hand, where the question of infringement was involved the invention emerging, like the genii from the bottle, loomed vast and threatening, though still of undefined shape and outline.

Congress in providing for the protection by patent of useful inventions has not placed upon the public any such burden as the petitioner has sought to make us bear in this case. It is as much a condition of the grant of the patent as is the fact of invention that the inventor should clearly describe his invention in his patent and should in and as a part of his patent "particularly point out and distinctly claim the part, improvement or combination which he claims as his invention or discovery." The duty laid upon the Commissioner of Patents and the great organization of the Patent Office is to investigate the novelty of the invention particularly pointed out and claimed by the inventor in his specification with a view of preventing the issue of patents covering inventions which were in fact not new and by means of which the public could be unjustly mulcted or impeded in the transaction of business. What is covered in any patent in accordance with statute law is, and is only, the invention particularly pointed out and claimed, and an invention which, under the law, the Commissioner of Patents has passed as novel. The interests of the inventor are carefully guarded, first in the provision by law of several appellate tribunals which practically eliminate the risk of an applicant being unjustly restricted in the scope of his claims; and, even after the issue of his patent, by the statutory provisions allowing the surrender and reissue of a defective

patent, or the correction of certain defects without surrender by means of disclaimer.

But the one burden placed upon the inventor of accurately describing, defining and claiming his invention can not be shifted without the destruction of the whole patent system and the imposition upon the public of an intolerable condition under which no man could tell what an issued patent covered or whether he was entitled or not entitled to carry on a certain process without infringing it.

These principles have been stated and reiterated by this court in a series of cases beginning with the earliest brought before it and continuing to the last.

Our contention is simply that, as found in the Court of Appeals, neither the purposes of this Jones invention as described and claimed in his patent nor the steps or method of the invention are those alleged by the petitioner or are those used by the defendant.

Petitioner's and Defendant's Contentions.

The essential difference between the petitioner and defendant may be summed up as follows:

The petitioner claims that the second claim of this patent is for a method of making Bessemer steel;—on the other hand, defendant contends that the method is one for mixing molten pig iron irrespective of the use to which it is afterwards put.

The petitioner claims that the method of the patent is limited to the mixing at a stage in the Bessemerizing of pig metal drawn directly from the smelting furnace;—defendant alleges on the other hand that no such limitation is contained in the patent, and that it is described and claimed as and is in fact applicable to both metal drawn directly from the smelting furnace and to the same metal after it has been remelted in a cupola furnace.

The petitioner alleges that the method covered by the patent not only includes but is, as we understand them, limited upon a method of handling molten cast iron in which a large reservoir is carefully maintained substantially full by the withdrawal of relatively small portions and immediate refilling to maintain the volume practically constant. The patent requires as petitioner understands it the constant presence in the reservoir of what is designated as a *dominating* pool, and they carefully define the word "dominating" as thus used, to mean preponderating in bulk; on the other hand defendant claims that nothing is to be found in the patent which requires the presence of this preponderating and dominating pool and that the constant presence of any considerable residue even though it is far from preponderating is clearly within the scope and meaning of the patent. In this last mentioned difference between the parties no question of infringement would perhaps seem to be involved as the defendant's construction of the patent is in this respect broader than that of the plaintiff.

The petitioner alleges that the purpose of the Jones method is to produce an iron not of regular and uniform composition, but of such gradual varying quality as will prevent material variations between successive converter charges and certain consequent evils in the process of Bessermizing the iron which they allege to be incident to abrupt variations in the composition of the metal;—on the other hand, defendant claim, that the clearly expressed purpose of the method is *simply to produce iron of uniform standard composition* with regard to its non-metallic ingredients whereby steel, either Bessemer or open hearth, *or castings*, made from such uniform iron will also be uniform and homogeneous in its chemical composition.

The real difference between the parties is simply this, that the petitioner claims as within the scope of the patent

the storing of melted pig iron in a reservoir in which such incidental mixing as is common in all reservoirs occurs, while the defendant claims that the patent is limited to a method of bringing the iron to a uniform composition, a method which is totally incompatible with the use of the reservoir as a point of storage for all the iron produced, into which it is dumped as it is produced, and from which it is drawn as it is required for use.

Defendant's Practice.

The defendant company has in its works at Johnstown a large number of iron smelting furnaces and a large number of Bessemer converters, it has also a huge reservoir tank capable of holding about three hundred tons of molten iron into which all the iron from the smelting furnaces is dumped as it is tapped from the furnaces and from which iron is drawn for use in the Bessemer converters as it is required.

It is obvious that it is a matter of practical impossibility that a great iron producing plant like the group of iron smelting furnaces and a great steel making plant like the group of Bessemer converters could be run with perfect synchronism. Sometimes the smelting furnaces will produce iron faster than it is required for conversion into steel and sometimes the Bessemer converters will use iron more rapidly than it is being produced in the smelting furnace. By providing a great reservoir of melted iron all irregularities in the running of the plant are avoided. There is a place for the storage of the iron whenever the furnaces are ready to deliver it and a place in which iron can be found ready for use whenever the converters require it.

Obviously the iron which is delivered into the resorvoir is more or less mixed and averaged up in its composition. As the defendants use the reservoir, however, it does not result in the production of an iron of uniform composition, in

fact the composition of the iron varies through very wide limits as is shown by numerous analysis in the record. On the other hand the variations in the composition of the iron in successive charges drawn from the reservoir are not so great as they doubtless would be found at times to be in charges drawn from separate smelting furnaces; but defendant makes no selection of the iron which is dumped into the reservoir and pays no attention whatever to the composition of the iron drawn from the resorvoir, or to the amount in the vessel, except to insure a supply.

Infringement.

The question of infringement in this case is simply whether the use of a reservoir for storing all of the metal produced in the furnaces without selection or effort to produce a mixture of uniform composition, with only such incidental mixing as naturally occurs in the operation of storing the metal, and with the result of producing mixed metal not at all uniform in composition, is the same method as that specified and claimed in the Jones patent.

The reasons for holding the defendants use not to infringe are to be included in three groups.

First, the clear and unambiguous meaning of the patent specification including its claim, in which the sole purpose of the invention is stated to be the attainment of uniformity in the composition of the metal, and in which the mixing described is only such mixing as will result in uniformity.

Second, the file wrapper and contents of the Jones application for a patent, in which Mr. Jones originally specified and claimed his invention as a method for *storing and mixing* pig metal, without special limitation on the attainment of a uniform homogeneous mixture, that his application having been rejected as lacking in novelty by reason of

prior publications and patents, he redrew his application so as to confine it to *a method of mixing pig metal to a standard homogeneous composition as distinguished from a method of storing metal with only such mixing as was incidental to storage*, pointing out in letters to the Commissioner of Patents that the essence of his invention lay in the uniformity of the product, and that a uniform product could not be obtained without *selection* of the metal charged into the tank, and was therefore not obtained in the older practice by which the reservoir was used to receive all of the metal from the producing furnaces *without selection*.

The third reason for holding that the second claim of the Jones patent does not cover and include the defendant's use which we urged in the lower courts is—that if so construed the patent was invalid by reason of clear anticipations in the prior art as shown both by testimony as to numerous uses and the introductions of older patents and publications, a brief statement of which is given above.

Carnegie's and Gayley's Statement of the Jones Invention.

It is out of the question of course to expect this Court to examine the whole record in order to familiarize itself with the prior art, but there are two pieces of testimony, both very brief, which let in a flood of light on the position of the Jones invention in the art and the only way in which it could, in the judgment of the two living men best adapted from their knowledge of its origin and development, be distinguished from the former practice of storing metal in reservoirs. We refer to the testimony of Mr. Andrew Carnegie the head of the complainants' firm, and of Mr. Gayley the manager of the company, who signs the present petition.

While we recognize that we cannot expect the Court to familiarize itself with the entire state of the prior art and

will not pretend to spread it before the Court, for that very reason we will quote the testimony of the two above mentioned witnesses for the petitioner before discussing the patent specification and the patent office proceedings, because this testimony shows how far this Jones method was from being a fundamental or pioneer invention, and that in fact it depended for its existence and distinction from the older uses upon a mere delicate refinement of manipulation in a familiar everyday method of storing molten metal. Thus Mr. Carnegie in describing Jones' explanation to him of the invention which he had made and introduced in the Carnegie works says: Q. 5, page 645—

> "He explained how he would take the charge of six blast furnaces, placing each into small portions; he could detect in each of these portions the excessive sulphur, for instance, or he could tell whether one furnace was yielding suitable metal or not. He would then have perhaps twenty or thirty carloads of portions of the output of six different blast furnaces; and he could even select from these small cars at the mixer he proposed to erect, if necessary, such portions as would neutralize each other, thus giving him a system of averages."

Again on being referred to a publication describing the storing of molten metal he says of it: Q. 15, pp. 648 and 649.

> "The great point is not touched upon here at all. It fails to grasp the soul of the invention—the law of averages; the dealing with successive small portions of metal which can be *selected* either at the blast furnaces or at the mixer."

Further describing and defining the Jones invention Mr. Carnegie says in answer to Q. 26, page 652:

> "The great point is that the Jones invention gives the superintendents the means of controlling this,

whether they will or will *not send forward metal which may be at that time unsuitable* for combining with the product of the other furnaces."

And again in answer to Q. 71, p. 667, Mr. Carnegie says:

"It all depends upon whether a mixture takes place of such suitable metal as in combination will produce the standard quality."

You will find Mr. Carnegie's explanation of the Jones invention absolutely consistent with the description in the patent and the facts shown in the file, wrapper, and contents of the patent application, namely, that Mr. Jones, *sole object* was to produce metal of *uniform standard composition* and his method of doing this was by mixing together *selected* batches or charges of metal ununiform in composition, the selection being made in such a way that they would produce the *uniform standard metal* when mixed together. This result of *a uniform standard metal* can be produced by a mixing together of *selected* charges but it cannot be attained, and is not attained by such a mode of use of the reservoir as the defendants make in which all the metal of the furnaces is charged into it *without selection.*

Neither the witnesses nor the counsel for the petitioners claim that the defendants obtain a uniform standard metal, but they place the advantage accruing to the defendants, aside from the storage of the metal, on the fact that while the metal differs very widely in its chemical composition it varies only gradually and avoids, not a lack of uniformity in the Bessemer steel produced from it, but certain difficulties in the operation of Bessemerizing the iron which are, they say, due to abrupt irregularities in the composition of the iron, but which alleged difficulties are not even mentioned in the specification of the patent.

Again, the perfect right of the defendant or of anyone else to use a storage reservoir for its iron and the fact that the use of such a reservoir was an old and common practice, is stated by Mr. Gayley (See page 828), which he says:

> "The Jones mixer was not installed as a reservoir at the Edgar Thomson Steel Works, nor has it been considered to be especially valuable for that purpose. The reservoir feature and the advantage in supplying uniform weights to the converter are comparatively unimportant."

And again on page 831:

> "The mixer would never have been introduced in our works on account of its reservoir functions. The whole thought was mixing. There was no need of it for any other purpose."

And his testimony on page 830, as follows:

> "*The use of the reservoir, simply as such, between the blast furnaces and converters, is really a step backward.*"

What Mr. Gayley says has a meaning if it is understood to refer to such a process of mixing to the standard composition and by a selection of the constituent elements to be mixed as Mr. Carnegie describes. It is totally incompatible with the claim that the mixing method of Jones was such mixing as took place in the ordinary method of storing metal in a reservoir.

The Invention as Described, Distinguished and Claimed in the Patent.

Very much of complainant's evidence and of the petitioner's argument in this case are as irrelevant as the time honored Ollendorfian dialogue:

"Does your sister speak German?"

"No; but my brother plays on the German flute."

There never was a simpler patent, or one which in more clear or more direct language specified and claimed a more easily understood operation.

In the first place, the patent is by title and recital at the beginning of the specification for an Improved "METHOD OF MIXING MOLTEN PIG METAL."

At the beginning of the specification, the patentee states that "the primary object of his invention is to provide means (*i. e., mixed pig metal*) for rendering the PRODUCT OF STEEL WORKS UNIFORM IN CHEMICAL COMPOSITION."

Passing then to a statement of the defects of unmixed pig metal, the inventor states that as it comes from the producing smelting furnaces, it contains unequally distributed admixtures of silicon and sulphur (generally termed "metalloids" or as in claim 2, "non-metallic constituents,") in consequence of which unequal distribution, he says: "THE PRODUCT of the refining process in the converters, or otherwise, LACKS UNIFORMITY IN THESE ELEMENTS (*i. e.*, silicon and sulpur) * * * making it impossible TO MANUFACTURE ALL THE **Articles** OF A SINGLE ORDER OF HOMOGENEOUS COMPOSITION," and *this*. the inventor states in the paragraph beginning with the second column of the first page, is particularly true in the process of refining the pig metal in convertors; that is to say, Bessemerizing the iron. This states and means and can mean nothing else, that BESSEMER STEEL is particularly liable to be UNUNIFORM IN CHEMICAL COMPOSITION if made from ununiform iron.

The object which the inventor states he has primarily in view is not, you will observe, to improve the refining process by which the iron is converted into steel, but simply to provide a refined PRODUCT *which shall be "uniform in chemical composition"* and the evil which he seeks to overcome is, not any difficulty *in the process of refining the iron*, but a lack of uniformity in the proportion of *silicon and*

sulphur present in the refined PRODUCT, by reason of which ununiformity in the refined PRODUCT articles made from the steel are not "of a single order of homogeneous composition."

The primary object of the invention is then plainly stated to be, to provide a mixed pig metal as a means by which a steel homogeneous in the presence and distribution of silicon and sulphur may be obtained.

These are very plain matters, very plainly stated in the specification, but it seems advisable to point them out with some emphasis because though the matter is clear enough to the Court of Appeals you will find nothing in the long and learned opinion of the judge of the Circuit Court which would lead you even to infer that the production of a STEEL uniform in silicon and sulphur admixture had ever crossed the patentee's mind.

The specification, beginning with line 59 of the first page, states that:

> "For the purpose of avoiding the practical evils above stated (and these evils are simply the production of a steel ununiform in contained sulphur and silicon; no other evil has been even suggested.) "I use in the refining process a charge——"

going on to state that this charge is made up by mixing ununiform portions of the molten pig metal so as to average them up in the contained silicon and sulphur and produce a mixed charge of molten pig metal having a uniform distribution of silicon and sulphur, and pointing out that, as the homogeneous mixture produced by this mixing is an average mixture, all the mixed charges produced by similar treatment will be "substantially uniform" and the "PRODUCT of all" (*i. e.*, THE STEEL produced from the mixed pig metal) "will be homeogeneous (that is, it will contain the same proportionate quantities of silicon and sulphur.")

Following this statement and beginning with line 83 of the first page, the inventor points out that his mixing of molten pig metal may be practiced in a variety of forms of apparatus, instancing a charging ladle such as was, and is, in common use in steel works and having thus made it clear that his invention is entirely independent of the form or size of apparatus employed as a mixing receptacle, he states his preference for the form of apparatus illustrated in his drawings and which forms the subject matter of his other patent not involved in this case.

Before, however, he passes to a description of his preferred and patented form of apparatus the inventor is careful to obviate any false impression the reader of his patent might receive from the statement that the *primary* object of his invention was to provide a means (mixed pig metal) for making the *product* of steel works uniform in chemical composition (that is, in contained sulphur and silicon) by a clear statement to the effect that his invention was in no wise limited to the use to which his mixed pig metal may be put; stating, beginning with line 100 of the first page.

> "My invention is not limited to its use in connection with converters, since similar advantages (note here that the advantages are *uniformity in product and nothing else*) may be obtained by casting the metal from the mixing vessel into pigs for use in converters, puddling furnaces, or for any other use to which pig metal may be put in the art."

This is consistent with the title of his invention; with the nature of the method as explained in the specification and with obvious facts, because a uniform composition of pig metal is useful and desirable for every purpose to which pig metal can be put in the art, whether it is first converted into steel or wrought iron, or used direct for making car wheels or other castings. The uniformity *in the product*

with regard to its chemical composition is manifestly a desirable attainment because products ununiform in chemical composition are necessarily ununiform in physical qualities and practical utility.

The inventor is exceedingly anxious not to be misunderstood on this point and he reiterates at other points in his specification the fact that his invention is one for producing a *uniform pig iron* irrespective of the uses to which such iron may be put; thus, for instance, in describing the plant illustrated in his drawings, which is a part of a Bessemer steel making plant, he is careful to throw in cautionary remarks to preclude the possibility of his being understood to limit himself on the described operation of this plant. Referring to the cars 15 which receive the metal from his mixing receptacle, he says that they—(line 126, page 2) "are transported to the converters, *or the metal is cast into pigs or otherwise used*" and then (see sentence beginning with line 3, page 3) he says that instead of carrying the metal in the cars to the "converters *or casting house*" these cars may be dispensed with and the mixing vessel arranged "to deliver its contents immediately to the converters *or other places where it is to be utilized.*"

The specification from line 5 of page 2 is taken up with a description of the mixing vessel and other apparatus shown in the drawings of the patent and which mixing vessel the inventor states "may be of any convenient size, holding, say, one hundred tons of metal more or less."

Referring to the peculiar form of this tank or receiver and the location of the discharge spout at some distance above the flat bottom of the vessel the inventor says of this—"the purpose of which is that when the metal is poured out of the spout *a considerable quantity* (and we wish to note here that "*a considerable quantity*" means simply—*a not*

inconsiderable quantity,)* may always be left remaining and unpoured and that whenever the vessel is replenished there may already be contained in it *a body* of molten metal with which the fresh addition may mix. *I thus secure, as much as possible, uniformity in character of the metal* which is fed to and discharged from the tank, AND cause the fluctuations in quality of the successive tappings to be very gradual."

The words used in the general description of the treatment with regard to the product of mixing are "*practically* homogeneous," line 70, page 1, and "*substantially* uniform," line 80, page 1. The purpose of manipulation just described, by which some "considerable quantity" of mixed metal is left in the receiver at all times is stated to be to "secure *as much as possible*, uniformity." We wish to note particularly, at this point that the obvious reading of the passage is as a measure directed toward the end sought namely, uniformity, and not as a measure directed toward ununiformity. This is consistent not only with the language used but with the obvious nature of the manipulation because it is manifest that the presence in the receiver of a considerable body of iron having the desired standard average composition would tend toward and not away from the attainment of the result sought, namely, a uniform product.

Referring to this same feature of the construction of the tank illustrated in the drawing, the inventor says again (line 33, p. 2) that the effect of having a residue of the average mixed character left in the vessel when it is recharged is that "each new charge mixes with parts of previous charges remaining in the vessel, by which means any sudden variations in the quality of the metal supplied to the

*Among the meanings of "Considerable" are "Worthy of being considered; worthy of regard; deserving notice; more than a little; not small." *Worcester.*

converter is avoided." A statement again which is perfectly consistent with the declared object of the mixing treatment, namely, the production of substantial and practical uniformity and homogeneity both in the chemical composition of the iron and of the *thing*, be it steel or otherwise, which is produced or made of the iron.

With regard to the relative proportionate quantity of the residue which the inventor contemplates keeping in his vessel, the specification contains no instructions beyond the one quoted, namely, that it should be a "considerable quantity." Measurements made by the experts in the case, of the vessels illustrated in the drawings, indicate to them that this particular vessel was adapted to preserve as a residue about *one-third* of the normal charge of the vessel, but obviously there is no limitation on any definite quantity and *any "considerable quantity"* would be within the meaning and intent of the patentee, and would, to a greater or less extent, serve the purpose which he points out as being served by using, as one constituent of his mixture, an already mixed portion of iron.

THE FIRST CLAIM of the patent covers the process of equalizing the chemical composition of the crude pig metal by the mixing together and averaging up of ununiform portions as described in the specification, but *adds, as a step in the method or process, the subsequent refining of the equalized charge.* This claim was sued upon and formed the subject matter of much of the evidence in the case, being abandoned by the plaintiff only during the taking of its rebuttal evidence.

THE SECOND CLAIM, which is the only one which we are now charged with infringing, is *specifically broader than the first claim, in not calling for any refining treatment of the mixed iron, and in being limited, in accordance with the statement of the invention, only to the mixing of molten*

pig metal to the end of securing uniformity in the chemical composition of the molten pig metal. Such mixing of the metal is stated to be "preparatory to further treatment," but further treatment of any kind is not made a part of the process, and the words "further treatment," beyond a possibility of reasonable question, relate to any and all of the treatments specified by the patentee as being of a character which would be benefitted *in product* by the use of his mixed pig metal, that is,—treatment in a converter,—treatment in a puddling furnace,—treatment in an open hearth furnace,—treatment by casting it into pigs or—treatment in any way in which iron is used in the art.

This claim is, however, specifically limited on the operation of mixing the metal in a tank which is *not emptied before being refilled*, the language of the claim being—"removing portions only of the composite molten contents of the receptacle without *entirely draining or emptying the same*." No doubt the words used with regard to the residue to be left were advisedly used to exclude, as they unquestionably do exclude, the construction of the claim as being limited to the maintenance of a residue of mixed metal of any specific amount. Equally without doubt, while the words "*without entirely draining or emptying*," would seem to cover any way of operating the tank in which any residual metal was left in it, they should not be construed as covering a treatment in which an absolutely inconsiderable residue was left, because, if the claim had any vitality, it must be because the residue produces some effect and some such effect as the specification attributes to it. Consequently one using a mixing treatment such as Mr. Jones specifies would not infringe the second claim if he operated his tank so that, although it was not entirely emptied, it was left with an inconsiderable and practically non-influential residue. On the other hand, any one who

used a tank to receive the ununiform metal in such a way as to preserve a residue of mixed metal as a constituent of the charge, which was *large enough to produce some effect in the direction of unifying the total charge*, and *if he mixed to a standard composition*, would if he followed Mr. Jones, infringe upon the claim, and if he preceded Mr. Jones, anticipate the claim.

We have tried in the above statement of the contents and scope of the patent, somewhat amplified from the brief but similar analysis in the opinion of the Appellate Court, to give it a perfectly fair reading and to emphasize and point out only facts which are, or should be, indisputable facts, as to which there is no room for controversy. The complainants' experts and the opinion of the Circuit Court attribute to Mr. Jones, objects which are not stated in his patents to be **His** objects; they entirely disregard the statements which he makes as to **His** object and they attribute to the Jones patent, and indeed limit it upon, manipulations of the method of the second claim which are not inferable from anything contained in the specification and are flatly in contradiction to the clear language of the claim.

The truth is that most of the issues of this case, as they have been raised by the expert witnesses for the complainant, considered by the Circuit Court and urged in the petitioner's brief, are absolutely foreign to the patented invention.

Fundamental Errors in the Petitioner's Construction of the Patent.

Whereas, as a matter of fact, the process or method described by Jones has to do, simply and solely, with the unifying and making homogeneous of the pig iron produced from blast furnaces, with a particular, though not exclusive, view to the production of steel or other refined iron product

also homogeneous and uniform in its admixed silicon and sulphur, complainant's experts, followed by the Circuit Court *, find that Mr. Jones' object was not to produce a uniform pig iron and that he was not in the least concerned with the chemical composition of the steel or other article made from the pig iron, but *that his sole object was to furnish a supply of metal to a Bessemer converter of such character as would enable the operator of the converter to manipulate it and convert the iron with less trouble and liability to error than had previously been the case.*

A difficulty which converter men had encountered was an uncertainty as to how to blow or Bessemerize the metal owing to the fact that frequently successive converter charges were of widely different composition, requiring somewhat different treatment in the converter. Some pig iron required, as the Circuit Court states, a very considerable cooling down by the operation known as "scrapping;" some requiring much less cooling down, while some pig iron required a heating up by what was called "side blowing." All these difficulties could be overcome, entirely apart from unifying the composition of the metal, and entirely apart from any question affecting the chemical composition of the steel, by providing that the converter charges, no matter how widely they may vary in the aggregate, shall not vary within wide limits between successive charges. Thus, the Circuit Court, in its opinion, (*76 bottom of page) says: "*The question facing Jones was* NOT HOW TO REACH UNIFORMITY, BUT HOW TO OBTAIN A GRADUAL NON-ABRUPT NON-UNIFORMITY," and further on, referring to one of our claimed anticipatory uses, the Court says, (*80): "*The purpose of Whitney was, as we have seen.* RELATIVELY ABSOLUTE UNI-

* The opinion of the Circuit Court commences on page 100 *27 in Vol. 2. For convenience we refer only to the star page: for example: "*27."

FORMITY OF PRODUCT. THAT RESULT WAS NEVER ATTAINED BY JONES OR ANY ONE ELSE IN THE DIRECT PROCESS."

Now the problem which the Court states may have faced Jones but it certainly was not the problem which Jones faced, and the Court overlooks entirely the ultimate object which Jones states with regard to the *product*, made from his mixed pig iron, namely, THAT THE *articles* produced (steel, puddled iron, or casting) SHOULD BE OF UNIFORM CHEMICAL COMPOSITION WITH REGARD TO METALLOIDS, ESPECIALLY SILICON AND SULPHUR.

THERE IS NOT A WORD IN MR. JONES' SPECIFICATION WHICH CAN BE CONSTRUED AS STATING OR IMPLYING THAT THE OPERATION OF BESSEMERIZING THE IRON IN A CONVERTER WAS IN ANY WAY AFFECTED, EITHER BENEFICIALLY OR OTHERWISE BY THE USE OF HIS MIXED METAL. It is true, of course, and fully recognized by Mr. Jones that absolute uniformity is unattainable in practical operation, but *relatively absolute uniformity*," as the Circuit Court terms it, was just as much in his intention as it could be of Whitney or anybody else, for his purpose, with special but not exclusive regard to steel, was *the production of chemically uniform steel*, just as the object of Whitney *was the production of chemically uniform iron.*

The residue of the second claim is described in the specification as a factor tending toward *uniformity*, and such, unquestionably, must be the effect of a residue of approximately the desired composition. The statements by Jones that the residue has the effect of causing fluctuations in the composition of successive tappings to be gradual is not made as an alternative statement to the function of the residue in securing the highest possible degree of uniformity, that is—the patentee does not say you may use a residue as an effective means towards substantial uniformity of the final product, *or* you may disregard the question of uniformity in

product and use the residue simply as a means of avoiding consecutive wide variations in converter charges, but he states the functions of the residue as a factor tending towards *uniformity* as operating at the same time, and as perfectly consistent with its operation in avoiding ununiformity of consecutive taps, and, as we have already pointed out, he no where suggests any utility in the function of the residue in avoiding abrupt variations except that which is incident to its functions as a general leveling and averaging up medium, namely, the production of uniform iron and of chemically uniform steel from the iron.

Another most important point in which the Circuit Court was misled by complainant's experts was in finding Mr. Jones' invention to consist of, and be limited upon *the use of a* DOMINATING *residue*, and the Court uses the word *dominating* in the sense of *preponderating*.

In substance, the Circuit Court understands the true Jones invention to consist *in keeping a huge reservoir substantially* FULL *of molten metal, tapping from it* RELATIVELY SMALL PORTIONS *for treatment in a Bessemer converter, and maintaining the reservoir full by the substantially simultaneous addition of* RELATIVELY SMALL CHARGES *of metal from the blast furnace*. In charging this receptacle, the Circuit Court conceives little or no attention to be paid to the composition of the metal charged into it, or to the preservation in the huge reservoir of any approximately uniform mixture and no attention to be given to the ultimate chemical composition of the steel produced in the converters. Operated in this way the great, *preponderating, dominating* pool of metal in the reservoir will prevent abrupt variations in converter charges drawn in consecutive order from it, while permitting a very wide variation between converter charges drawn at considerable intervals, the advantage residing entirely in the simplifying of the conversion of the metal with

regard to scrapping, side blowing, etc., the chemical composition of the steel produced being permitted to vary as it will.

Now, with regard to this ingenious theory, it ought to be enough, we think, to refer this Court to the patent, where not one word of suggestion is found with regard to a preponderating and dominating pool such as the Circuit Court supposes;—where no limitation is to be found as to the relative size of the residue and of the charges drawn from the receiver; where uniformity in the composition of the metal is the sole object stated to be in view, and where the second claim, the only one having any reference to the mixing with the residue, is drawn in language, almost too broad, *i. e.*, "without entirely emptying or draining," so as to emphatically cover the mixing operation if carried on with any appreciable residue so long as it is carried on as specified "to secure uniformity" in the molten metal.

Another fundamental error of the petitioner followed by the Judge of the Circuit Court, is in the meaning given to the words "molten metal" of the claim. The first claim is limited to "metal direct from the smelting furnace," but the second claim in contrast therewith has the broad term "molten metal," but the Circuit Court (p. *50) says "It would therefore seem that the metal to be mixed was metal direct from the blast furnace." Now the natural meaning of the words "molten metal" are so clear that it needs no argument to show that they would include any metal in a molten condition, while the fact that the cupola metal is identical in composition and as clearly needs mixing as the direct metal is conclusively proven*; and the fact that Capt. Jones so understood the term and used it is shown in his application for the machine patent, sworn to and filed on

* See Record. Gayley, p. 55. A. 39-40, p. 78, X Q. 139; Kennedy, p. 701. X Q. 66-7; Fry, p. 766, X Q. 87; Nicholson, p. 156, j. X Q. 75; Forsyth, p. 392, Q. 22; p. 395, Q. 31-33; Hunt, p. 436, Q. 20-25; Morgan, p. 542; p. 602, X Q. 81, etc.

the same day as the application for the method patent, where he describes the same large reservoir "for holding and mixing the charges of **molten metal** which are supplied thereto, **either from a blast furnace or cupola,**" and **then** describes the process of this 2nd claim (1024) is also conclusive evidence of the meaning of the term.

With the three fundamental errors pointed out above fully appreciated by this Court, the opinion of the Circuit Court might almost serve as a brief for the defendant, because it is only on the erroneous assumptions pointed out that the Court bases its discrimination against most of the prior uses and publications which it discusses.

It would seem as though the Circuit Court in the profound and careful study which it has evidently given to this case had completely lost sight of the fact that the case is based on *a patent* and that we are sued for the use of *a patented invention;* in fact, if the patent has been considered at all, it would seem to be by a method of mixing and averaging up its plain and clear statements with the very long and exceedingly ununiform statements of the complainant's experts and counsel; and by a process which involves both a pouring in and a pouring out, the Court had finally arrived at a construction of the patent which incorporates, not even a "considerable," certainly not a "dominating" residue of the specified and claimed invention.

If we infringe any patent owned by the Carnegie Company it is a patent for which no warrant exists in the laws of the United States, to-wit: one granted by judicial decree of the Circuit Court and not by the Commissioner of Patents, and, moreover, one, as you will see in reading the opinion of the Circuit Court, the infringement of which depends *not upon what we are doing*, but upon the Court's judgment as to the *governing intent* which leads us to do it.

A comparison of the claim as issued by the Patent Office and as construed by the petitioners' counsel and the Circuit Court can best be made by the expedient of drawing a claim to cover what the Court states in its opinion is covered by the claim and we have thought it most convenient to take the original claim and amplify or alter it to embody the Court's construction in the following example: the words of the original claim are printed in black, a red erasure line being drawn through those words which are eliminated in the Court's construction and the additional matter supplied by the Court being printed in red ink.

In the art of mixing molten metal direct from the blast furnace (*50) to secure ~~uniformity~~ gradual non-abrupt non-uniformity (*76) of the same in its constituent parts ~~preparatory to further treatment,~~ so that one charge is a guide to the blowing of the next (*51) and producing steel therefrom by Bessemerizing in the converter (*50) the process of introducing from carrying ladles (*58) into a covered tilting (*58) mixing receptacle relatively small successive portions of molten metal direct from the blast furnace (*50) non-uniform in their non-metallic constituents (sulphur, silicon, etc.) until a great pool (*44) of metal sufficient to form a dominating mass (*45) is created, removing portions only of the composite molten contents of the receptacle ~~without entirely draining or emptying the same~~ while still maintaining this preponderating and dominating pool of metal (*45, *47,) the successive portions so withdrawn being not uniform but gradually varying (*46, *47, *50, *53, *57, *72, *76, etc.,) successively replenishing the receptacle with fresh ununiform additions of metal direct from the blast furnace (*50) in relatively small portions (*45) and without permitting the metal to solidify, Bessemerizing the gradually varying portions withdrawn in a converter (*50,) ~~substantially as and for the purposes described.~~

Claim 2 of Jones Patent.

"In the art of mixing molten metal to secure uniformity of the same in its constituent parts preparatory to further treatment, the process of introducing into a mixing receptacle successive portions of molten metal ununiform in their non metallic constituents(sulphur, silicon, etc.), removing portions only of the composite molten contents of the receptacle, etc., without entirely draining or emptying the same, and successively replenishing the receptacle with fresh ununiform additions, substantially as and for the purposes described."

Claim 2 as Construed by the Circuit Court.

In the art of mixing molten metal direct from the blast furnace (*50) to secure gradual non abrupt non-uniformity (*76) of the same in its constituent parts,so that one charge is a guide to the blowing of the next (*51) and producing steel therefrom by Bessemerizing in the converter (*50), the process of introducing from carrying ladles(*58) into a covered tilting (*58) mixing receptacle relatively small successive portions (*45) of molten metal direct from the blast furnace (*50) non-uniform in their non-metallic constituents (sulphur, silicon, &c.) until a great pool (*44 of metal sufficient to form a dominating mass (*45) is created, removing portions only of the composite molten contents of the receptacle while still maintaining this preponderating and dominating pool of metal (*45, *47), the successive portions so withdrawn being not uniform but gradually varying(*46, *47, *50, *53, *57, *72, *76, etc.), successfully replenishing the receptacle with fresh ununiform additions of metal direct from the blast furnace (*50) in relatively small portions (*45) and without permitting the metal to solidify, Bessemerizing the gradually varying portions withdrawn in a converter (*50).

Certainly these remarkable limitations are not found in the patent itself, and under the decisions they cannot be read into the claim.

Since the case of *Goodyear D. V. Co. vs. Davis*, 102 U. S., 222, it has been understood law that "a patent, like any other written instrument, is to be interpreted by its own terms" (227). The patentee is bound by his claim, and is

not entitled to narrow it to save the patent where the meaning of the claim itself is clear. See also

Railroad Co. vs. Mellon, 104 U. S. 112.
Yale Mfg. Co. vs. Greenlief, 117 U. S. 554.
White vs. Dunbar, 119 U. S. 47.
McClain vs. Ortmayer, 141 U. S. 419.

The Light Cast Upon the Construction of the Patent by the Proceedings in the Patent Office.

In a case where the meaning and scope of a patent specification and claim is as clear as we conceive it to be in the present case, it would certainly not be competent to vary such clear and well expressed meaning by reference to proceedings in the Patent Office; but, on the other hand, it is both competent and useful to refer to the Patent Office papers in confirmation of the clear expressions of the issued patent, and for the purpose of showing that the limitations found in the patent were carefully considered, and were in fact required by the Commissioner of Patents as the *sine qua non* of the grant.

The Patent Office proceedings are printed on pages 1001 to 1017, the first pages of Vol. 3.

The original specification and claims, as filed, are found on page 1001 to 1007. On comparing this paper with the revised and enlarged specification of the patent you will find that, while the original application refers, as does the issued patent, to the desirability of securing pig metal of uniform character as a means for insuring the production of steel or castings of uniform composition, the original paper also states and emphasizes as a function of the invention the storing or reservoiring of the melted pig iron, and the original claim is for a method of storing and equalizing the pig metal.

Thoroughout the specification the big receiving vessel is constantly referred to as *a reservoir* and, in the erased clause of the specification printed on page 1006 the inventor says:

> "*The main feature of my present invention is the method of* STORING *successive charges of molten metal in a receptacle, etc., etc.*"

The application as filed was flatly rejected by the Patent Office as completely anticipated by patents Nos. 315,587 of April 14, 1885, and 327,425 of Sept. 29, 1885, both granted to Witherow, and also by a publication of 1881, entitled "Kirk's Founding of Metals."

In consequence of this adverse action of the Patent Office the original claim was withdrawn and a new claim presented, which is printed at the top of page 1009. The essential difference between this new and the original claim lies in the withdraw of all reference to *storage* of the metal and the statement of the sole function of the treatment to be for the purpose of equalizing the character of the pig iron.

In connection with this altered claim an argument was filed, printed on pp. 1009 and 1010 of the record, in which the distinction is made that the Witherow process as described in his patent is simply to provide a receptacle—

> "to receive and *store* the molten metal for the purpose of preventing the detention incident to the necessity of discharging the contents of the blast furnace when there is no converter ready to receive it,"

and the attorneys for Mr. Jones further pointed out that there was no idea expressed in the Witherow patents of a purpose to mix and average up the composition of the metal. In contrast with this they say the purpose of Jones is to obtain "a uniform average quality of metal," and this, they say with reference to such plans of storing the metal as is

described in the Witherow patents and Kirk publication.—"has been hitherto found to be practically unattainable."

Briefly summed up the argument principally used against the Witherow patents, and successfully used, since they were withdrawn by the examiner, was simply this, viz:—that such mixing as occurs incident to the storage of metal will not result "in a uniform average quality of metal," which uniformity in composition, the attorneys claimed that Jones secured and which uniformity, they say, had previously been unattainable. *The argument comes down to the proposition that proof of the storage of metal with incidental mixing was not an anticipation of Jones' invention because such incidental mixing was not to an approximately uniform standard which was the object and result of Jones' mixing.*

The next action by the Patent Office, printed on page 1010, was the rejection of the amended claim as fully met in the Kirk publication and the examiner also cites some additional patents as being apposite to the issue presented.

In consequence of this second rejection the matter of the original specification shown as cancelled by red lines on pages 1002 and 1006 was stricken out; the amended claim was also cancelled and, in place of the erased matter and claim, the new matter and new claims printed on pages 1011 and 1013 were substituted. No written argument accompanied this last amendment and the next action of the Patent Office was the allowance of the case.

It is to be presumed that a personal interview was had with the examiner in connection with the last amendment, and it was made to appear to him that the subject matter of the amended application was distinguishable from that of the Kirk publication. While it is to be regretted, perhaps, that the argument in support of the last amendment was not made a part of the Patent Office file there is not the

least difficulty in tracing in the amendment exactly what the distinction made by the attorney and accepted by the Patent Office was.

In the first place, it is a pregnant fact that, either by the recognition of the skilled lawyers who prosecuted the application or by the insistence of the Patent Office, the very pronounced difference between the original subject matter of the patent, which was for a process of storing molten pig iron with incidental mixing, and the subject matter of the amended case, which is for mixing *to a standard composition* without reference to the storing of the metal, was conceded and a new affidavit was filed in support of the amended case for the reason that the original affidavit was as to the novelty and originality of the different subject matter of the case as filed.

Returning to the text of the amendment, you will find on examining it, that it made the following salient changes in the original paper:

In the first place, it removed from the specification all passages which referred to the *storing or reservoiring* of the metal.

In the second place, the matter added by the amendment restated in clearer and more emphatic language than was contained in the original specification the fact that the mixing by the Jones method was a mixing *to a uniform predetermined standard.*

In the third place, the new matter added by the amendment states, for the first time, as the function of the Jones method and the ultimate object had in view, the production of steel or of other products of the treatment or use of the iron which would have a uniform chemical composition with particular reference to the presence of *sulphur and silicon.*

The fourth material addition made to the specification is the clause describing the mixing process as carried on in a charging ladle, which ladle use, (see page 1 of the patent, lines 84 to 91) can only mean mixing *to a standard composition* because it describes the receiving into the charging ladle of metal *from several other ladles or receiving vessels*, giving a more perfect picture of the selecting of the ingredients and their mixing to the standard composition than was contained in other parts of the specification,

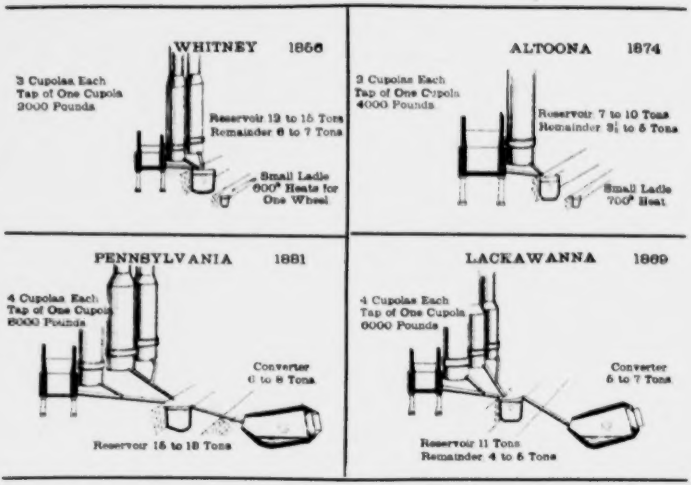
There is no difficulty in following the distinction made by the counsel prosecuting the application and accepted by the Patent Office; they are sufficiently indicated in the argumentative letter preceding the amendment and are as clear from the nature of the final amendments as they would have been if accompanied by voluminous commentary. Kirk's described method of mixing in a reservoir was distinct from the Jones method because it was *reservoir mixing* which would not result in the production of metal of a certain uniform standard composition, whereas the Jones method is carefully limited to such mixing as results in *uniformity* which, as the specification clearly indicates, and Mr. Carnegie and Mr. Gayley emphatically state, is incompatible with the use of a reservoir as such, that is to say, as a place where all the molten metal is stored and from which it is drawn for use.

We are confident that an examination of the Patent Office correspondence will satisfy this Court, as it did the Circuit Court of Appeals, that what the defendants are doing with their molten pig iron is precisely such a treatment as was carefully distinguished in the Patent Office from the alleged Jones invention and to all intents and purposes effectually disclaimed and distinguished as a condition for the allowance and grant of the patent.

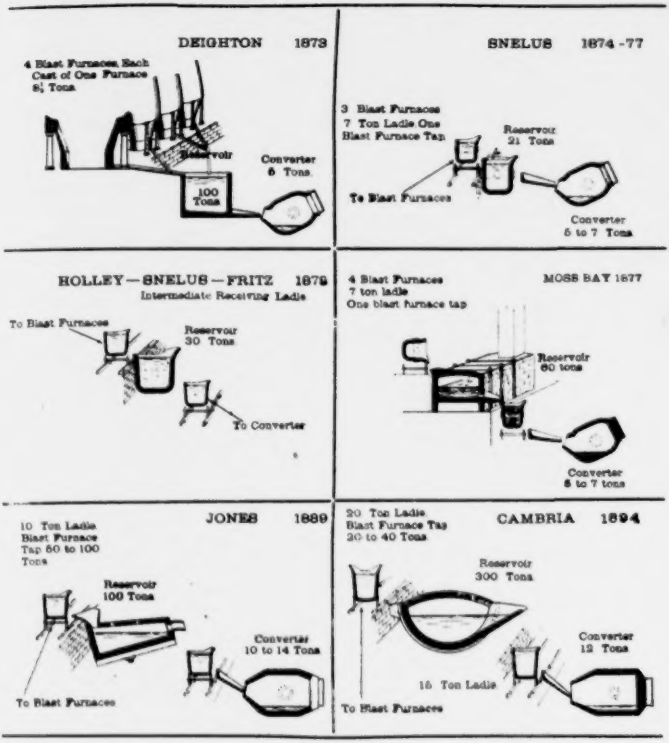
Patentability.

As to the third point, that the patent is undoubtedly anticipated if given any such construction as would cover this defendant's practice, we think little need be added to the statement of the art made above. The moment attempt is made to construe the patent to cover the reservoiring of the metal without selection, that is the carrying of all the metal produced by the blast furnaces into the reservoir, the practice of the Deighton patent and of the Bessemer Accumulating Ladle, as used by the defendant Company and others, as referred to by the Appellate Court; the Whitney practice; the Tabberner patent; the Snelus disclosures; and the Holley Report as to Moss Bay, above discussed, negative any idea of patentable invention. The art is well shown in the accompanying cuts, both as to cupola and blast furnace metal.

CUPOLA MOLTEN METAL.



BLAST FURNACE MOLTEN METAL.



The cuts are also instructive in showing the gradual advance in storage capacity as found necessary for reservoiring from twelve (12) tons up to as high as one hundred (100) prior to the Jones invention.

Jones was certainly not the first to provide an intermediate storage reservoir for either blast furnace or other metal;——nor the first to mix metal to average it up and give uniformity either of product or of the successive charges withdrawn;——nor the first to receive successive additions into the reservoir;——nor the first to withdraw successive charges, leaving a considerable or even a dominatating remainder;——nor the first to add a relatively

small addition to the remainder and through the large mass remaining, even it up and obtain more uniform withdrawals; ——nor the first even to Bessemerize the metal withdrawn.

No new principle is shown. The mixing is admitted to have taken place according to the law of diffusion, being a fundamental law of nature, known "ever since man began to observe nature's laws." (993.) Indeed, complainant's witness, Kennedy, admits that there is not a new step present. (709.)

There is no new result. If uniformity of product or of successive charges was the object, even greater uniformity is found in the car wheel practice, and in Kirk. If it was gradual non-abrupt, non-uniformity, as the Circuit Court held, in the reservoir practice of the American Bessemer ladle, and that described by Deighton, Snelus and Holley, where the metals were not selected so as to give a standard composition, but the reservoirs were used in their natural way, even this peculiar effect, (not described in the patent) would be found.

The decisions of this Court in *Lovell Manufacturing Co. vs. Carey*, 147 U. S. 623; *Smith vs. Nichols*, 21 Wall. 112; *Leggett vs. Standard Oil Co.*, 149 U. S. 287; *Miller vs. Force*, 116 U. S. 22, are all pertinent to show that there could be no invention present. The "furniture spring" case, *Lovell Co. vs. Carey*, is directly in point, where the Court held it to be the same process in tempering wire clock bells, hair springs and furniture springs, and that to apply the invention to tempering the latter springs was a mere double use. The "glue soup" case, *Leggett vs. Standard Oil Co.*, seems also to be especially applicable, as the only difference between the Whitney practice and the Jones patent is in the treatment of blast furnace metal and remelted or cupola metal, while in that case the only difference was in the use of the glue before it solidified and after it had

solidified and was remelted, and this Court held this to be "merely a question of degree." Very pertinent also is the decision of Judge Acheson in *U. S. Mills Co. vs. Carnegie Steel Co.*, 89 F. R. 343, where this petitioner endeavored to escape infringement on similar grounds, and the Court said:

> "The problem of manufacturing sound castings from wrought iron or steel is precisely the same, whether the molten metal is produced in one way or the other."

Conclusion.

From our point of view, the true construction of the Jones patent is so clear, and so manifestly that given to it by the Circuit Court of Appeals, that it would make no difference in the construction of the patent even if Captain Jones had been in fact an inventor—an inventor entitled to be classed with Bessemer and Mushet, as the petitioners' counsel class him in their brief. Now, as a matter of fact, Captain Jones did do something for which he deserved credit and commendation, and that was to design and construct a huge reservoir adapted for use in storing the product of the modern blast furnace plant. In great plants such as that of the Carnegie and defendant companies there is a perfect river of molten iron produced and handled; the production is, and was at the time Captain Jones erected his reservoir, enormously greater than it had been but a few years before. Captain Jones showed first class engineering skill and some little invention in devising and constructing the peculiar tipping reservoir illustrated in the drawing of his patent, and which forms the subject matter of a separate patent applied for by him at the same time as the one now in suit. The testimony as to foreign use, referred to by the petitioner, applies as largely to this mixer as to the reservoiring, which, as above shown, was not Jones' invention. His

patent for the vessel covered the real extent of his invention, and the method patent was, as we have shown, pushed through the Patent Office either with the erroneous impression that mixing to a standard was practically necessary or advisable, or, if Captain Jones knew that mixing such as was incident to storing the metal in a reservoir was sufficient, by misrepresentation. However that may be, the fact being made clear that the patent is based solely on the distinction of mixing to a standard composition as distinguished from storing with incidental mixing, it is absurd for counsel to come here and say that because mixing to a uniform standard is utterly unnecessary this patent must be construed to cover mixing incident to reservoir storage.

It was conceded by the experts and counsel for the petitioner and was even conceded by the judge in the Circuit Court that the defendants had a time honored and a perfect right to store their molten metal in a reservoir, intermediate between the producing furnaces and the converters in which it was used. It was not disputed and is conceded even by the learned judge in the Circuit Court, that it is impossible to store metal in a molten condition without incidental mixing occurring and a greater or less averaging up of the constituent parts of the metal. It was not claimed by anybody and is not stated, even in the opinion of the Circuit Court, that the defendants obtain any greater uniformity in the composition of their metal than is incident to its storage and the use of a storage reservoir in the way in which storage reservoirs have always been used in handling molten pig metal. How then is it possible to hold that the defendants infringe the petitioners' patent, and how could the Appellate Court have come to any other conclusion than the one they did come to and announce in their opinion?

The argument of the petitioners' counsel is confusing to the intellect and confounding to the understanding. Confronted with masses of proof as to the uses of the intermediate reservoir in the prior art, they distinguish such uses, as Captain Jones did in the Patent Office, by claiming that it was mere incidental mixing incident to the storage of metal.

Confronted with proof of the extensive use of intermediate mixing reservoirs in which the metal was mixed to a standard composition, as in the case of the Whitney use mentioned in the opinion of the Circuit Court, they call witnesses to prove that the Carnegie Works, did not, in fact, mix to a standard composition and they set up the theory that the sole object of the patent was to secure a gradually varying, or, as the Circuit Court calls it, non-abrupt non-uniformity; therefore, they urge the Whitney use not to anticipate the invention because it was mixing to a standard.

Confronted with proof of the use in the petitioner's own works, as well as in other steel works in America, of intermediate reservoirs in which the metal was stored between the furnaces and converters and in which the fresh metal from the furnaces was habitually charged into a very considerable residue, the petitioners' witnesses and counsel say—oh, yes, of course there was mixing and averaging up to a certain extent in our old reservoirs, and of course in a general way we knew it, but we did not appreciate its value in the steel making art; and then, again, our old practice was to leave the residue which, although considerable, was not preponderating, while the practice which Jones' reservoir in the petitioners' works is to run it with a preponderating and dominating pool of metal—and the Judge of the Circuit Court held the Jones process to be different from the old reservoir practice in

the steel works because he was satisfied that the advantage of the mixing which occurred was not fully realized by those who practised the mixing, but chiefly because the old practice did not involve the constant presence of a preponderating residue in the reservoirs; although as we have shown you in discussing the patent, there is nothing in it to even suggest the preservation of a dominating residue, and the claim involved is most carefully drawn to cover mixing where any residue aiding in mixing is preserved.

It is not necessary to pursue the subject further. No argument has been made, or could be made, in support of a construction of this patent which would hold the defendants to infringe which is not open to the criticism of inconsistency which we trust we have made clear with reference to the opinion of the Judge of the Circuit Court, and which does not depend, also, upon a violent hauling into this patent of conditions, limitations and explanations entirely absent from the document and foreign to its declared purpose and intention.

The case is so clear a one that even if there had been a dissenting Judge in the Court of Appeals we believe this Court would have found no cause for issuing the writ. In view of the unanimous reversal of the Circuit Court there is, as far as we can find, no precedent for even seriously considering such a question as is the one raised by the petition.

Respectfully submitted,

JAMES I. KAY,
FRANCIS T. CHAMBERS,
PHILIP T. DODGE,
Counsel for Defendant.